ABSTRACT

Learning Design Development of Measurement Topic Based on Realistic Mathematics Education with Traditional Games Context in Grade V of Elementary School

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Measurement was one of the topics which are difficult to understand by learners. This condition was shown from the learning outcomes of Measurement topic studied in grade V of Elementary school which were not yet optimal. One of the causes was that the concepts learned by students were not yet built coherently. This research aimed to develop the learning design of Measurement based on RME to provide an understanding of the Measurement material, and to develop reasoning skills.

This study combined Plomp's model of research design (2013) with the research design model of Gravemeijer & Cobb (2006). The stages of design research in this study were preliminary study phase, prototype development phase, preparation for the experiment, the implementation of the experiment, retrospective analysis and assessment phase. In the prototype development phase conducted formative evaluation, to investigate the validity and practicalities including self evaluation, expert review, one to one, small group, and a field test. At the stage of evaluation, summative assessment was carried out to investigate the effectiveness of the product the mathematical reasoning abilities of learners. The subject of this research was students at V class in SD N 14 Dalam Koto and SD N 01 Pasa Surian, Solok, West Sumatera, on odd semester in academic year 2016/2017. Data collected through tests, interviews, observation and field notes.

This study results in learning design for Measurement with RME approach use traditional games. Learning design developed is in the form of learning flows that include learning objectives, activities, and prediction of students' answers implemented through the teacher's book and the students' books. The result obtained from trials which were conducted on implementation phase in the class shows that the learning design developed can induce students' positive attitude toward learning, such as enjoying learning, becoming more creative, getting use to reasoning, and improving students' interaction. This research produced a learning design which is valid, practical and effective. It is valid in terms of content and language, practical in terms of implementation, simplicity and required time, and effective in term of the impact of students' mathematical reasoning skills. This design includes the results in the form of LIT for learning Measurement, namely: finding the concept of times measurement, finding the concept of distance measurement, inventing the concept of speed.

ABSTRAK

Pengembangan Desain Pembelajaran Pengukuran Berbasis *Realistic Mathematics Education* Dengan Konteks Permainan Rakyat di Kelas V SD

Rahayu Eka Putri

Pengukuran adalah salah satu topik yang sulit dipahami peserta didik. Kondisi ini ditunjukkan dari hasil belajar topik Pengukuran di kelas V SD yang belum optimal. Salah satu penyebabnya adalah konsep-konsep yang dipelajari peserta didik belum dibangun secara runtut. Penelitian ini bertujuan mengembangkan desain pembelajaran barisan dan deret berbasis RME untuk memberi pemahaman tentang materi Pengukuran serta mengembangkan kemampuan penalaran.

Penelitian ini mengkombinasikan *design research* model Plomp (2013) dengan model *design research* Gravemeijer & Cobb (2006). Tahapan *design research* dalam penelitian ini yaitu fase penelitian pendahuluan, fase pengembangan prototipe, persiapan eksperimen, pelaksanaan eksperimen, analisis restrosfektif, dan fase penilaian. Pada tahap pengembangan prototipe dilakukan formatif evaluation, untuk menyelidiki validitas dan praktikalitas yang meliputi *self evaluation*, *expert review*, *one to one*, *small group*, dan *field test*. Pada tahap penilaian dilakukan *summative evaluation* untuk menyelidiki efektivitas produk terhadap kemampuan penalaran matematis peserta didik. Subjek dalam penelitian ini adalah peserta didik kelas V SD N 14 Dalam Koto dan SD N 01 Pasa Surian, Solok, Sumatera Barat semester ganjil tahun ajaran 2016/2017. Data penelitian dikumpulkan melalui tes, wawancara, observasi dan catatan lapangan.

Penelitian ini menghasilkan desain pembelajaran untuk topik Pengukuran dengan pendekatan RME dengan konteks permainan rakyat. Desain pembelajaran yang dikembangkan berupa alur belajar yang memuat tujuan pembelajaran, aktivitas dan prediksi jawaban peserta didik yang diimplementasikan melalui buku guru dan buku siswa. Hasil yang didapatkan dari uji coba yang dilakukan pada tahap implementasi di kelas terlihat bahwa desain pembelajaran yang dikembangkan dapat menumbuhkan sikap positif yaitu peserta didik senang belajar, semakin kreatif, peserta didik mulai terbiasa bernalar dan interaksi peserta didik meningkat. Dari penelitian ini telah dihasilkan desain pembelajaran yang valid, praktis dan efektif. Valid dari segi isi dan bahasa. Praktis dari segi keterlaksanaan, kemudahan dan waktu yang diperlukan. Efektif dari segi dampak kemampuan penalaran matematis peserta didik. Desain ini memuat hasil berupa LIT untuk pembelajaran Pengukuran, yaitu: menemukan konsep pengukuran waktu, menemukan konsep pengukuran jarak, menemukan konsep pengukuran kecepatan.